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ABSTRACT

The testing procedures used in an introductory psychology class at Utah State University are described. Students who had either taken the course earlier or were concurrently enrolled in the class served as testing managers. Rooms were capable of supporting up to 250 students during class time for written exams. "Permits" to take a test have required the signatures of interviewing managers for admission into the testing room and permission to take a particular test. A testing manager's signature was then required for permission to continue through the next set of oral interviews with the interviewing manager. Written exams required a minimum of 90% mastery to pass and oral interviews required a minimum of 100% mastery. Failed exams could be taken at a later time without penalty. A general trend toward maximum testing was shown until the fourth testing week. Following this peak, the trend reverses to form an inverted "U" shape. This effect conflicts with the expectation that a positively accelerated rate of test-taking would occur in a self-paced system of instruction. Current studies are investigating this effect. (Author/LH)

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TESTING IN A PERSONALIZED SYSTEM OF INSTRUCTION

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Testing in a Personalized System of Instruction

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Abstract

The purpose of this paper is to describe the testing procedures used in our introductory psychology class at Utah State University. Students who had either taken the course earlier or were concurrently enrolled in the class served as testing managers. Rooms were capable of supporting up to 250 students during class time for written exams. "Permits" to take a test have required the signatures of interviewing managers for admission into the testing room and permission to take a particular test. A testing manager's signature was then required for permission to continue through the next set of oral interviews with the interviewing manager. Written exams required a minimum of 90% mastery to pass and oral interviews required a minimum of 100% mastery. Failed exams could be taken at a later time without penalty. A general trend toward maximum testing was shown until the fourth testing week. Following this peak, the trend reversed to form an inverted "U" shape. This effect conflicts with the expectation that a positively accelerated rate of test-taking would occur in a self-paced system of instruction. Current studies are investigating this effect.

Our class has developed and used a personalized system of instruction (PSI) to teach introductory psychology. PSI was first discussed by Keller in 1963 (Keller, 1966) and put into practice later at Arizona State University (Keller, 1968) among other places. PSI consists of five major characteristics which, when put together, distinguish it from other forms of teaching: first, students are allowed to work at their own pace; second, there is an emphasis placed on the written word to disseminate information as well as the spoken word; third, lectures are used to motivate students rather than to transmit critical information for a test; fourth, students are required perfect mastery of unit materials prior to proceeding; fifth, proctors are used to provide instant feedback in terms of testing and orally "studying" for tests.

Our class has consisted of four kinds of proctors (i.e., managers). Interviewing managers were used to assist students in orally preparing their unit materials prior to written exams (see Ensign, Edwards, and Powers, 1971). Project managers were used to assist students in preparing self-management projects as a laboratory exercise (see Edwards and Powers, 1971). Teaching assistants were used to hand out critical information, relay comments and complaints to the instructor, and conduct meetings with the interviewing managers to assure that the same information was passed from the instructor. Finally, testing managers tested each student over each set of oral materials through written quizzes. The purpose of this paper is to describe the testing procedures used in our class in introductory psychology.

Methods

Subjects

All managers were students who had either taken the course or were concurrently enrolled. Five testing managers were selected as needs arose, one at a time. During the fall quarter, three testing managers were freshmen females and were concurrently enrolled in the class, one male was a junior and was concurrently enrolled in the class, and one female was a sophomore who had taken the course in an earlier quarter. In the winter, one female freshman returned to continue as a testing manager, one former student requested a position as a testing manager, and one concurrently enrolled student was assigned to assist. In the spring quarter all three testing managers returned and one former student assisted.

Apparatus and Facilities

In the fall quarter two rooms were used to house the students as they were being tested. In one room, the University Center lobby, about 20 tables were used which could hold two or three students as they were being tested if necessary. The second room held about 30 students in individual chairs. Since about 400 students were initially enrolled, the testing areas were usually crowded. During the winter term, when enrollment was about 200, a room capable of housing 40 students was used and was never at any one time crowded. During the current term, a room capable of handling 250 students is being used and crowding is not occurring. Forms admitting students into the testing room were used. With these forms, students are required to have the interviewing manager's signature accompanying the test which the students are ready for.

Procedure

Goodall (1972) has presented some information concerned with the interviewing managers and how students were proceeded through the sets of material leading to the written exams in our classes. Once the "permits" to testing were presented, students were given one of five forms of a written exam covering material over the three units within the set. Each exam contained one question from each of the units and most questions from all study guide questions were included on the total five forms. Each unit study guide contained about 8 to 10 questions. Once the written exam was taken, students returned their test papers to one of the testing managers and waited until the tester could review the questions with him. Students were required to defend at least one answer orally whether it appeared correct or not. If all three questions were satisfactorily answered on paper, (and one orally) the student was passed, the "permit" was signed by the testing manager, and the student was then permitted to orally present the material covered in the next three units. A score of 90% or better was required for a passing grade on all written work, but any unclear written answers were necessarily defended prior to a pass.

Students were required to complete 10 written exams over a total of 30 units, after which time they could then take the written final exam. Finals were all on the last few Fridays of the quarter. Testing was allowed five days each week at the regular class meeting time and an additional hour was allowed for the final exam.

A daily report was made out for each manager which listed the names of students who had taken tests. These reports indicated test number, form, letter, and pass or fail grade. These forms allowed a double check on whether students were bypassing the managers or not.

Results

Figure 1 shows the group results for test taking during the winter quarter. There is a general trend toward an increase in the number of tests taken each day until the middle of the term when the trend reverses to form an inverted "U" shape. This is contradictory to the predictions made about "scalloping" within a self-paced system of instruction. Not noted in the figure is which tests were taken on any given day. In addition, it is not noted where final exams were taken, as final exam data is not included. However, since final exams were only given on Fridays, it apparently had little effect on the trends. Notice that the population is counted only for the first and last exam. Most of the students who dropped between the first and tenth exams did so after the first and second.

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... Insert Figure 1 about here ...

Of interest in Figure 1 is the drop in the trend which occurred in week 7. Notice that there are only four points represented during that week. The day omitted is a Monday which was Washington's birthday, which was not scheduled on the college calendar. The day apparently affected the entire week by the result of a drop in all days during that week. In weeks 8 and 9 the previous trend returned. Another interesting observation is the tendency for students to take exams on Wednesdays during the winter term. Peak test days appeared on every Wednesday, except week 4, during the term.

Discussion

Some major problems associated with testing in the fall term were that friends often tested friends too leniently, too few test forms in the fall quarter allowed memorization of a few test questions, and too little testing space for the number of students enrolled allowed "cribbing". During the winter quarter several revisions were made in the testing procedures which allowed for more effective testing of students. The class was smaller and did not over-crowd the testing facilities. The use of test "permits" denoted the completion prior oral interviews and eliminated, for the most part, the problem of students trying to take tests even though they had not completed the oral interviews. (A few students, however, were found who had bypassed the managers by signing their permits). The permits also kept students from taking more than one test per day.

We are trying now to determine whether a self-paced program produces increased test-taking at the end of the quarter because of students waiting until the deadline. We are also trying to determine whether adding points for taking interviews early and reducing points for taking interviews late affects self-paced performance during the present term (see also Cheney and Powers, 1971).

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Figure Caption

1. Total written exams taken during each class day during the winter term.

WINTER '72

TEST

1 : N=168

10 : N=145

TESTS

